Listing of the Claims

1. (Canceled)

2. (Previously Presented) The apparatus of claim 46, wherein the processor is configured to track at least one of said at least one target by measuring motion parameters of said target.

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Previously Presented) The apparatus of claim 46, wherein the processor is configured to compute said initial parametric representation from a plurality of acquired images.

8. (Previously Presented) The apparatus of claim 7, wherein the processor is configured to compute an average pixel image and a standard deviation pixel image from said plurality of acquired images.

9. (Previously Presented) The apparatus of claim 7, wherein the processor is configured to compute a minimum pixel value image and a maximum pixel value image from said plurality of acquired images.

10. (Previously Presented) The apparatus of claim 7, wherein the processor is configured to compute an average derivative value image and a standard deviation derivative pixel value image from said plurality of acquired images.

11. (Previously Presented) The apparatus of claim 8, wherein the processor is configured to compute, for each pixel of said parametric representation, a new average

pixel value and a new standard deviation value, using the value of a newly acquired pixel and a predetermined weight coefficient.

12. (Previously Presented) The apparatus of claim 9, wherein the processor is configured to compute, for each pixel of said parametric representation, a new minimum pixel value and a new maximum pixel value, according to the value of a newly acquired pixel.

13. (Previously Presented) The apparatus of claim 12, wherein between said new minimum pixel value and a previous minimum pixel value there is a maximum difference equal to 1, and between said new maximum pixel value and a previous maximum pixel value there is a maximum difference equal to 1.

14. (Previously Presented) The apparatus of claim 10, wherein the processor is configured to compute, for each pixel of said parametric representation, a new average derivative pixel value and a new standard deviation derivative value, using the value of a newly acquired pixel and a predetermined weight coefficient.

15. (Previously Presented) The apparatus of claim 8, wherein the processor is configured to compute whether a pixel is a hot pixel by comparing a difference between an actual value and an average value of said pixel with the standard deviation of said pixel.

16. (Previously Presented) The apparatus of claim 9, wherein the processor is configured to compute whether a pixel is a hot pixel by comparing a difference between an actual value and the minimum and maximum values of said pixels.

17. (Previously Presented) The apparatus of claim 10, wherein the processor is configured to compute whether a pixel is a hot pixel by comparing the difference between an actual derivative value and an average derivative value of said pixel with the standard deviation derivative of said pixel.

18. (Previously Presented) The apparatus of claim 46, wherein the processor is configured to define at least one target comprises means by segmenting said hot pixels into connected components.

19. (Previously Presented) The apparatus of claim 46, wherein the processor is configured to count the hot pixels in said target.

20. (Previously Presented) The apparatus of claim 46, wherein the processor is configured to compute a rectangle circumscribing said target.

21. (Previously Presented) The apparatus of claim 46, wherein the processor is configured to analyze said measured predefined parameters according to said application-specific criteria.

22. (Previously Presented) The apparatus of claim 2, wherein the processor is configured to match said target with an identical target in a previously captured image.

23. (Previously Presented) The apparatus of claim 22, wherein the processor is configured to compute geometric centers of gravity of said target in said image and the previously captured image.

24. (Previously Presented) A method of scene interpretation, comprising:

determining an initial parametric representation of said scene;

updating said parametric representation according to predefined criteria;

acquiring an image of said scene;

analyzing said image by determining which of said pixels are hot pixels, according to predefined criteria;

defining at least one target from said hot pixels;

measuring predefined parameters for at least one of said at least one target; and

determining, for at least one of said at least one target whether said target is of interest, according to application-specific criteria; and

outputting the results of said analysis.

25. (Previously Presented) The method of claim 24, additionally comprising:

tracking at least one of said at least one target, said step of tracking comprising the step of measuring motion parameters of said target.

26. (Previously Presented) The method of claim 24, wherein determining an initial parametric representation of said scene comprises computing said initial parametric representation from a plurality of acquired images.

27. (Previously Presented) The method of claim 26, wherein computing said initial parametric representation of said scene comprises computing an average pixel image and a standard deviation pixel image from said plurality of acquired images.

28. (Previously Presented) The method of claim 26, wherein computing said initial parametric representation of said scene comprises computing a minimum pixel value image and a maximum pixel value image from said plurality of acquired images.

29. (Previously Presented) The method of claim 26, wherein computing said initial parametric representation of said scene comprises computing an average derivative value image and a standard deviation derivative pixel value image from said plurality of acquired images.

30. (Previously Presented) The method of claim 27, wherein updating said parametric representation comprises computing, for each pixel of said parametric representation, a new average pixel value and a new standard deviation value, using the value of a newly acquired pixel and a predetermined weight coefficient.

31. (Previously Presented) The method of claim 28, wherein updating said parametric representation comprises computing, for each pixel of said parametric representation, a new minimum pixel value and a new maximum pixel value, according to the value of a newly acquired pixel.

32. (Previously Presented) The method of claim 31, wherein between said new minimum pixel value and a previous minimum pixel value there is a maximum difference

equal to 1, and between said new maximum pixel value and a previous maximum pixel value there is a maximum difference equal to 1.

33. (Previously Presented) The method of claim 29, wherein updating said parametric representation comprises means for computing, for each pixel of said parametric representation, a new average derivative pixel value and a new standard deviation derivative value, using the value of a newly acquired pixel and a predetermined weight coefficient.

34. (Previously Presented) The method of claim 27, wherein determining whether a pixel is hot comprises comparing the difference between an actual value and an average value of said pixel with the standard deviation of said pixel.

35. (Previously Presented) The method of claim 28, wherein determining whether a pixel is a hot pixel comprises comparing the difference between an actual value and the minimum and maximum values of said pixels.

36. (Previously Presented) The method of claim 29, wherein determining whether a pixel is a hot pixel comprises comparing the difference between an actual derivative value and an average derivative value of said pixel with the standard deviation derivative of said pixel.

37. (Previously Presented) The method of claim 24, wherein defining at least one target comprises segmenting said hot pixels into connected components.

38. (Previously Presented) The method of claim 24, wherein measuring predefined parameters comprises counting the hot pixels in said target.

39. (Previously Presented) The method of claim 24, wherein measuring predefined parameters comprises calculating a rectangle circumscribing said target.

40. (Previously Presented) The method of claim 24, wherein determining whether said target is of interest comprises analyzing said measured predefined parameters according to said application-specific criteria.

41. (Previously Presented) The method of claim 25, wherein measuring motion parameters comprises matching said target with an identical target in a previously captured image.

42. (Currently Amended) The method of claim 41, wherein matching comprises calculating geometric centers of gravity of said target in said image and the previously captured image.

43. (Previously Presented) A miniature autonomous apparatus for scene interpretation, comprising:

a digital camera for producing an image of a scene; and

a processor associated with said camera, said processor adapted to run at least a dynamic range control process and an image processing detection process, wherein the image detection process includes at least a first process for detecting a first status of individual pixels of the scene to determine the manner in which such pixels will be further processed; and

wherein the dynamic range control process is adapted to change the dynamic range settings of the camera, and is in communication with the image processing detection process such that when dynamic range is changed, the image detection process adapts itself to the new dynamic range setting.

44. (Previously Presented) The apparatus of claim 43, wherein the image processing detection process is configured to determine an initial parametric representation of the scene and to continuously update said parametric representation to slow changes in the scene.

45. (Previously Presented) The apparatus of claim 44, wherein said slow changes include changes in illumination.

46. (Previously Presented) The apparatus of claim 43, wherein the processor is configured to:

determine an initial parametric representation of said scene;

update said parametric representation according to predefined criteria;

analyze pixels of said image so as to determine which of said pixels are hot pixels, according to predefined criteria;

define at least one target from said hot pixels;

measure predefined parameters for at least one of said at least one target; and

determine for at least one of said at least one target whether said target is of interest, according to application-specific criteria.

47. (Previously Presented) The apparatus of claim 43, wherein digital camera has a frame size of the order of 1800 pixels and the image processing detection process is adapted to process 1 frame per second.

48. (Previously Presented) The apparatus of claim 43, wherein the image processing detection process is adapted to process less than 30 million pixels per second.

49. **(Previously Presented)** The Apparatus of claim 43, wherein the dynamic range control process is configured to match an amount of light captured by the camera to the sensitivity of the camera.

50. (New) The Apparatus of claim 43, wherein status categories of individual pixels includes hot pixels and at least one other category.

51. (New) The Apparatus of claim 50, wherein the image detection process identifies a subset of pixels of the scene.

52. (New) The Apparatus of claim 50, wherein the image detection process further includes a second process for processing the subset of pixels of the scene.

53. (New) The Apparatus of claim 43, wherein when dynamic range is changed, the image detection process adapts itself to the new dynamic range setting by updating internal processing parameters.